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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,622	07/06/2005	Hiroyuki Yamamoto	10873.1675USWO	8388

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EXAMINER	
YANCHUK, STEPHEN J	

ART UNIT	PAPER NUMBER
1795	

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06/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,622	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	STEPHEN YANCHUK	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/05/2008, 10/05/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

SEPARATOR MATERIAL AND METHOD OF PRODUCING THE SAME, AND ALKALI SECONDARY BATTERY SEPARATOR

DETAILED ACTION

Election/Restrictions

1. Claims 13-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/31/2009.

2. Applicant's election of claims 1-12 & 21 in the reply filed on 3/31/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-12 & 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (USPAT 6,423,445) with Komori et al (PGPUB 2002/0025472).

Claims 1 and 21 are rejected by Kato teaching a separator for alkaline battery [Abstract]. The separator is processed with SO_3 gas to make it Sulfonated [Col 4 Ln 30-47]. The sheet is made non-woven [Col 6 Ln 19]. The sheet comprises polyolefin fibers [Col 6 Ln 43]. The fiber sheet comprises fine fibers that are .5 denier or less, preferably, 7E-7 denier to .3 denier [Col 6 Ln 28-30]. Fusible fibers are also used in the non-woven separator [Col 7 Ln 22-30]. The various fibers and therefore associated proportions are taught [Col 8 Ln 5-17]. The molar ratio (S/C0 of the fiber sheet is taught to be 1E-3 or more [Col 4 Ln 47-61]. It is taught that the density per unit area of the separator is preferably 30-100g/m^2 or more preferably 40-80g/m^2 [Col 10 Ln 22]. This anticipates the specific surface area range of .6-1.5 m^2/g because Komori shows the specific area ranging from .6m2/g to .9m^2/g when the separator's weight per unit area ranges from 60-85g/m^2 [Para 12].

"Thermally bonding short fiber is flattened to bond..." is a product by process limitation and therefore does not positively recited product claim limitations.

Elements of claim 1 and Claim 2 are rejected because using various techniques to measure properties do not patentably distinct the instant application from the prior art since the invention taught by Kato anticipates the physical properties presented in the instant application.

Claim 3 is rejected by Kato teaching examples with tensile strengths of 176N/5cm [Table 1].

Claim 4 is rejected by thermal bonding fibers taught by Kato [Col 7 Ln 22-30]. The motion and changes of the fibers during bonding read on the claim. The claim as

written includes functional language and inherent properties that is inherently taught by Kato.

Claim 5 is rejected by Kato teaching the amount of fibers not being particularly limited wherein the fiber sheet contains 5-100% hydrophilic fibers, 0-70% fine fibers, 0-70% high-strength fibers, and 0-95% fusible fibers [Col 8 Ln 4-10].

Claim 6 is rejected by Kato teaching the high-strength fibers having a tensile strength of 12g/denier (.12N/dtex) or more [Col 6 Ln 63-67]. These fibers exist in a non-woven mesh with other fibers [Col 8 Ln 4-10].

Claim 7 is rejected by Kato teaching the fineness being 7E-7 to .3 denier [Col 6 Ln 28-32].

Claims 8, 11and 12 define the product by how the product was made. Thus, claims 8, 11and 12 are product-by-process claims. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having the separator made of polyolefin fibers. The reference suggests such a product.

Claim 8 is rejected by Kato teaching splittable fibers [Col 6 Ln 54].

Claim 9 is rejected by Kato teaching polymethylpentene resin to be used with the fine fibers [Col 6 Ln 34-53].

Claim 10 is rejected by the fusible fibers being the same as the fine fibers but with a relatively lower Tg material than the fine fibers wherein the fineness would be the same as the fine fibers above [Col 7 Ln 22- Col 8 Ln 3].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-12 & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (USPAT 6,423,445) and Komori et al (PGPUB 2002/0025472).

Claims 1 & 21 are rejected by Kato teaching a separator for alkaline battery [Abstract]. The separator is processed with SO_3 gas to make it Sulfonated [Col 4 Ln 30-47]. The sheet is made non-woven [Col 6 Ln 19]. The sheet comprises polyolefin fibers [Col 6 Ln 43]. The fiber sheet comprises fine fibers that are .5 denier or less, preferably, 7E-7 denier to .3 denier [Col 6 Ln 28-30]. Fusible fibers are also used in the non-woven separator [Col 7 Ln 22-30]. The various fibers and therefore associated proportions are taught [Col 8 Ln 5-17]. The molar ratio (S/C0 of the fiber sheet is taught to be 1E-3 or more [Col 4 Ln 47-61]. It is taught that the density per unit area of the separator is preferably 30-100g/m^2 or more preferably 40-80g/m^2 [Col 10 Ln 22]. Kato fails to explicitly state the specific surface area.

Komori teaches the specific area ranging from .6m2/g to .9m^2/g when the separator's weight per unit area ranges from 60-85g/m^2 [Para 12]. It would have been obvious for one of ordinary skill in the art to make the area of Kato that of Komori

because Komori teaches an alkaline storage battery with excellent self-discharging characteristics [Paragraph4-6].

"Thermally bonding short fiber is flattened to bond..." is a product by process limitation and therefore does not positively recited product claim limitations.

Elements of claim 1 and Claim 2 are rejected because using various techniques to measure properties do not patentably distinct the instant application from the prior art since the invention taught by Kato anticipates the physical properties presented in the instant application.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN YANCHUK whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN YANCHUK/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795